

CLAIMS

What is claimed is:

1. A dietary supplement comprising:
an isolated carbohydrate-boron complex having a boron portion and at least one carbohydrate ligand complexed to the boron portion with a boron-ligand association constant of at least 50;
wherein the carbohydrate-boron complex is present in the dietary supplement in an amount sufficient to increase a plasma steroid concentration of a human ingesting the dietary supplement; and
at least one of a nutritionally acceptable form of calcium, magnesium, and vitamin D.
2. The dietary supplement of claim 1 wherein the carbohydrate ligand is selected from the group consisting of fructose, mannose, mannitol, sorbose, and sorbitol.
3. The dietary supplement of claim 2 wherein the carbohydrate-boron complex is a calcium salt of fructoborate.
4. The dietary supplement of claim 3 comprising the nutritionally acceptable form of calcium.
5. The dietary supplement of claim 3 comprising the nutritionally acceptable form of magnesium.
6. The dietary supplement of claim 3 comprising the nutritionally acceptable form of Vitamin D.
7. The dietary supplement of claim 3 wherein the steroid is 25-hydroxy-vitamin D3, and wherein the increase is at least 10%.
8. The dietary supplement of claim 3 wherein the steroid is testosterone, and wherein the increase is at least 10%.

9. The dietary supplement of claim 3 wherein the increase of the steroid concentration stimulates an increase in bone density.
10. The dietary supplement of claim 1 wherein the carbohydrate-boron complex and the at least one of a nutritionally acceptable form of calcium, magnesium, and vitamin D are combined in a tablet or capsule.
11. The dietary supplement of claim 1 wherein the carbohydrate-boron complex is present at an amount sufficient to increase bone density.
12. A method of increasing a steroid concentration in a human, comprising:
providing an isolated carbohydrate-boron complex having a boron portion and at least one carbohydrate ligand complexed to the boron portion with a boron-ligand association constant of at least 50; and
providing an instruction to administer the carbohydrate-boron complex under a protocol that increases the steroid concentration in the human.
13. The method of claim 12 wherein the carbohydrate ligand is selected from the group consisting of fructose, mannose, mannitol, sorbose, and sorbitol.
14. The method of claim 13 wherein the carbohydrate-boron complex is a calcium salt of fructoborate.
15. The method of claim 12 wherein the protocol comprises daily oral administration of at least 1 mg of the carbohydrate-boron complex over at least 30 days.
16. The method of claim 12 further comprising a step of co-administering at least one of a nutritionally acceptable form of calcium, magnesium, and vitamin D.
17. The method of claim 12 wherein the steroid is at least one of a testosterone, an estrogen, and a 25-hydroxy vitamin D3, and wherein the increase in the steroid concentration stimulates an increase in bone density in the human.

18. A method of marketing a dietary supplement, comprising:
providing at least one of a dietary supplement selected from the group of a nutritionally acceptable form of boron, calcium, magnesium, and vitamin D;
providing printed information that a combination of the nutritionally acceptable form of boron with at least one of the nutritionally acceptable form of calcium, magnesium, and vitamin D promotes bone health; and
wherein the nutritionally acceptable form of boron comprises an isolated carbohydrate-boron complex having a boron portion and at least one carbohydrate ligand complexed to the boron portion with a boron-ligand association constant of at least 250.
19. The method of claim 18 wherein the printed information further includes information that the nutritionally acceptable form of boron increases a steroid concentration in the human.
20. The method of claim 19 wherein the steroid is at least one of a testosterone, an estrogen, and a 25-hydroxy vitamin D3.